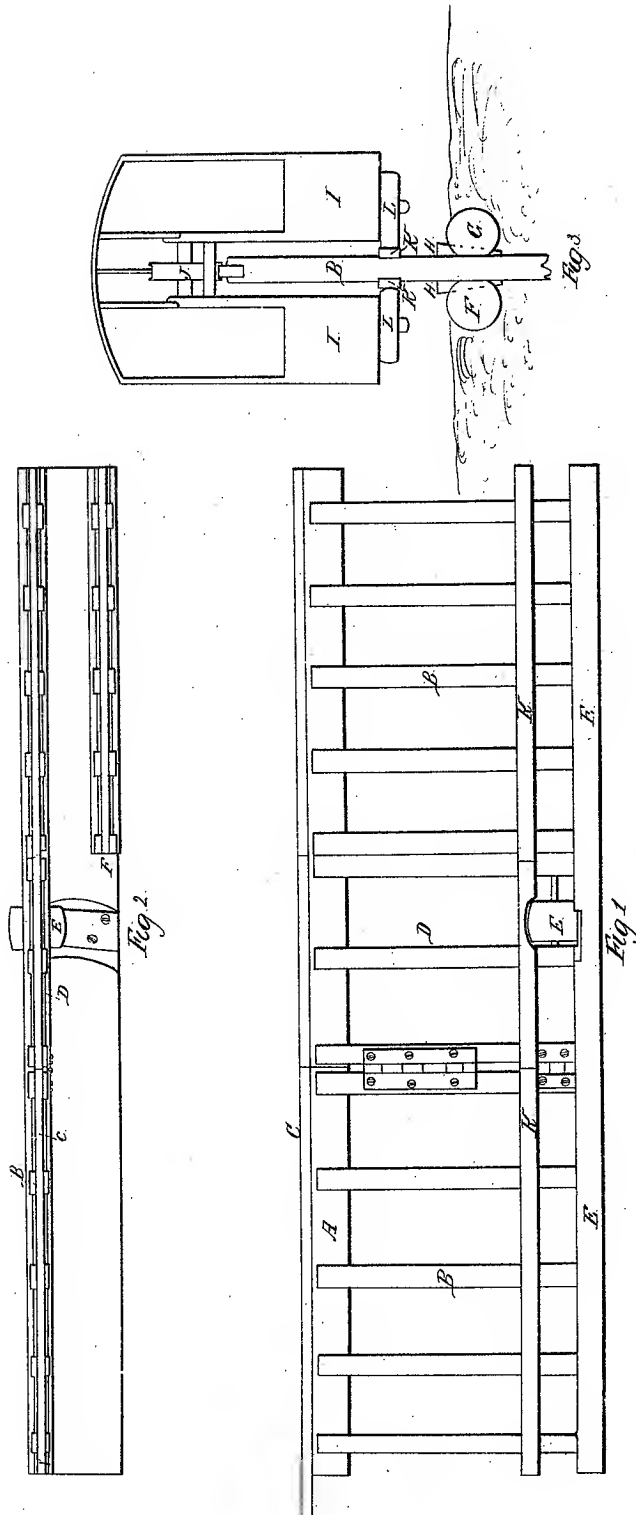


*U. Emmons.*

*Elevated Railway.*

*N<sup>o</sup> 164.*

*Patented Apr. 17, 1887.*



# UNITED STATES PATENT OFFICE.

URI EMMONS, OF FREEHOLD, NEW JERSEY.

## IMPROVEMENT IN THE MODE OF CONSTRUCTING SINGLE-RAIL RAILROADS.

Specification forming part of Letters Patent No. 167, dated April 17, 1837.

### *To all whom it may concern:*

Be it known that I, URI EMMONS, of Freehold, in the county of Monmouth and State of New Jersey, have invented certain improvements in the manner of constructing railroads of that kind in which the carriage-way consists of a single rail elevated upon posts; and I do hereby declare that the following is a full and exact description thereof.

The general construction of the single rail which I use is the same with that for which Letters Patent were obtained by a certain Henry R. Palmer, in England, in the year 1821. This single rail is elevated upon posts set in the ground, the rail being secured on the tops of the posts, and covered with an iron plate on its upper side. The strength of the rail must be such as to sustain the load that is to bear upon it, and this will be governed by the distance of the posts apart which support it.

In the accompanying drawings, A, Figure 1, is the rail, supported upon posts B B and covered by the iron rail-plate C. The posts may sometimes be mortised into a ground-sill, E E; but as ground is generally uneven and this mode of constructing railroads is intended to obviate the necessity, in the greater number of cases, of excavating and embanking, by giving the posts the proper length to reach the level of the rail, a horizontal ground-sill can rarely be used, and it is desirable to be able to fix these posts firmly at the lower ends by means which shall be adapted to uneven ground, be efficient without being costly, and be well calculated to keep the posts in a vertical position and allow of their adjustment when necessary. To effect this I take trunks of trees, from which I hew off a portion of one side, so that they will lie along against the posts, as shown in the transverse view at F G, Fig. 3. These logs may be buried partially or wholly in the ground, and they must be bound together by bolts or cross-ties in any convenient way. Between the vertical posts and the above-named logs I insert wedges H H, by the driving of which the posts may be at any time firmly fixed in a vertical position and regulated as may be desired. When the vertical posts are of considerable length, lateral braces must be used, and these may rise from cross-sills which rest upon the trees or logs, and which may serve at the same time as cross-ties to these logs.

Where it has been proposed to use a single

rail such as I have described, it has also been intended to construct a car or carriage consisting of two parts to be suspended from the rail—one part on each side thereof—with wheels between them near their tops to bear upon the rail in a manner analogous to that shown in the transverse view, Fig. 3, where I I are the two parts of the car or carriage, and J one of the running wheels. The main improvement which I have made in this part consists in the employment of guide-rails K K, which run along on each side of the posts, to which they are firmly affixed. These may ordinarily be placed about three feet below the top of the rail, and opposite to them, upon each section of the car or carriage, I place friction rollers or wheels L L, which generally run free of the guide-rails, but come into contact therewith when from any cause the carriage tends more toward the rail on one side than on the other. Other modes of fixing guide-rails and friction-rollers may be devised which will be substantially the same in operation as that above described—as, for example, there may be an edge-rail running along under one section of the car or carriage supported by arms from the vertical posts, and two friction-rollers attached to the under side of the section of the car or carriage may bear one on each side of such edge rail or plank. Such a plan, however, would not, in my opinion, be equally good with that first described, and I give it, therefore, merely as an exemplification of one variation of my plan.

The turn-outs which I intend to use resemble those described by the before-named Palmer; and I do not, therefore, claim anything new in this part of the structure; but

What I do claim as my invention is—

1. The manner herein described of fixing and regulating the vertical posts by means of logs placed in the ground along their lower ends, with wedges to be driven in between the logs and the posts.

2. The employment of guide-rails and friction-wheels in a single-rail railroad placed in the manner and for the purpose described, whether the same be effected precisely in the way herein set forth or in any other analogous thereto and producing a like result.

URI EMMONS.

Witnesses:

THOS P. JONES,  
W. THOMPSON.